

All gasoline engines  
Except engines with breakerless transistorized ignition

## Dwell angle for standard coil ignition

Engine	Test value <sup>1)</sup> at idling speed	Change between idling speed and 3000/min
100	total 33– <b>38</b> <sup>°</sup> single 16– <b>19</b> <sup>° 2)</sup>	max. $\pm 3^{\circ}$

<sup>1)</sup> Replace contacts if lower test value falls short (refer to Job No. 773).

<sup>2)</sup> Adjust dwell angle on both contact pairs. To determine dwell angle of one contact pair, make other pair inoperative by inserting an insulating shim.

## Dwell angle for transistorized ignition Identification: "blue" ignition coil, two series resistances and transistor switch unit

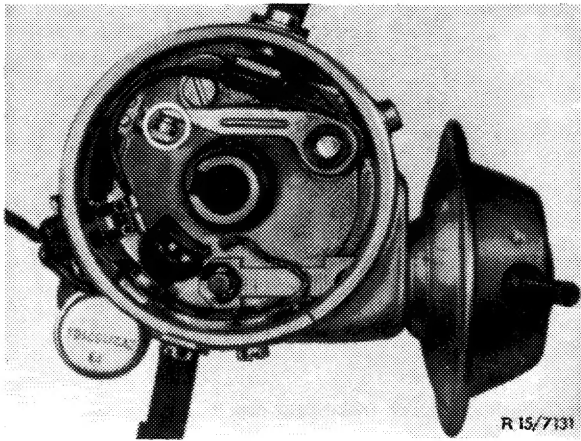
Engine	Test and adjusting value <sup>3)</sup> at idling speed	Change between idling speed and 3000/min
110	<b>34</b> –40 <sup>°</sup>	max. $\pm 3^{\circ}$
130	<b>30</b> –36 <sup>°</sup>	
115	<b>47</b> –53 <sup>°</sup>	
100 116 117	<b>30</b> –34 <sup>°</sup>	

<sup>3)</sup> If the test values are not attained, adjust contact breaker points to bold value  $\pm 1^{\circ}$

## Conventional tools

Dwell angle measuring instrument, revolution counter





- Connect measuring instruments (refer to pertinent notes).
- Measure dwell angle with engine idling.
- Measure variation in dwell angle between idling speed and 3000 rpm.  
Max. variation  $\pm 3^\circ$ .

#### Note

With standard coil ignition the dwell angle on worn contact points should **not** be re-adjusted. When the limit of wear is reached, the contact points must be renewed, refer to item 773.

With transistorized ignition the dwell angle may be re-adjusted.

### Instructions for measuring engine speed and dwell angle on vehicles with transistorized ignition

On vehicles with transistorized coil ignition the engine speed and the dwell angle **cannot** always be measured as accustomed.

Transistorized ignition systems of the **germanium** and **silicon** type are installed.

#### Identification mark:

**Germanium TSZ** Cable of **terminal 1** of ignition coil (color brown) **to ground**.

**Silicon-TSZ** Cable of **terminal 1** of ignition coil (color black) to **series resistance** (0.6 ohm).

**Silicon-TSZ with standardized switching unit:** Cable of **terminal 1** of ignition coil (color black) to **transistor switching unit terminal 16**.

Depending on type of tester employed and acc. to design of ignition system, connections must be made to varying terminals. Following are the required instructions for the most commonly used testers.

## Tester connections for germanium — TSZ

**SUN-testers without changeover for TSZ**

Ge-switching unit (flat plug connector)		
RPM-dwell angle tester TDT 11, 12	Red clip to	Black clip to
	Series resistor output 0.4 ohm (2 cable terminals at output)	Series resistor input 0.6 ohm (resistor between switching unit and ignition coil)
Engine tester EET 940, 945, 947, 1160 TUT-915 R	Cable connector terminal 7	Ground
	High-voltage trigger to cylinder 1 (connection, rpm impulse, secondary section)	

**Bosch-testers**

Mini-tester EFAW 226	Ignition coil terminal 15	Ignition coil terminal 1
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## Tester connections for silicon – TSZ

## SUN-tester without changeover for TSZ

	Si-switching unit (flat plug connector)		Si-standardized switching unit (round plug connector)	
	Red clip to	Black clip to	Red clip to	Black clip to
RPM dwell angle tester TDT 11, 12	Series resistor output 0.6 ohm (cable terminal to switching unit terminal 16)	Ground	Ignition coil terminal 1	Ground
Engine tester EET 940, 945, 947, 1160 TUT 915 R	Series resistor output 0.6 ohm (cable terminal to switching unit terminal 16)	Ground	Ignition coil terminal 1	Ground
	High voltage trigger to cylinder 1 (connection, rpm impulse, secondary section)			

## Bosch-testers

Mini-tester EFAW 226	Ignition coil terminal 15	Ignition coil terminal 1	Ignition coil terminal 15	Ignition coil terminal 1
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